

PATENT COOPERATION TREATY

To:

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 5 December 2005 (05.12.2005)	
Applicant's or agent's file reference	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/KR 2004/002435	International filing date (day/month/year) 22 September 2004 (22.09.2004)
Priority Date (day/month/year) 22 December 2003 (22.12.2003)	
International Patent Classification (IPC) or both national classification and IPC H04L 27/26, H04L 29/06, H04L 29/08	
Applicant ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE	

1. This opinion contains indications relating to the following items:

- ☒ Cont. No. I Basis of the opinion
- ☐ Cont. No. II Priority
- ☐ Cont. No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Cont. No. IV Lack of unity of invention
- ☒ Cont. No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Cont. No. VI Certain documents cited
- ☐ Cont. No. VII Certain defects in the international application
- ☐ Cont. No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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Form PCT/ISA/237 (cover sheet) (January 2004)

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/KR 2004/002435

AP20 Rec'd PCT/PTO 21 JUN 2006

Continuation No. I

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed.

Continuation No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims ----	YES
	Claims 1-11	NO
Inventive step (IS)	Claims ----	YES
	Claims 1-11	NO
Industrial applicability (IA)	Claims 1-11	YES
	Claims ----	NO

2. Citations and explanations:

Document D1 outlines the proposal of a broadband quality-oriented WLAN system, thereby distinguishing the four lowest protocol layers. The service layer (SL) corresponds to classical network functions (addressing, routing) and traffic handling functions (flow classification/declaration, admission control, traffic policing, and/or shaping). A major example of an SL is the IP layer possibly enhanced with QoS handling capabilities. Another example is ATM, in which case SL classes could be the standard ATM traffic categories constant bit rate (CBR), variable bit rate (VBR), available bit rate (ABR), and unspecified bit rate (UBR). The adaptation layer (AL) mainly performs the classification of SL packets into medium access control (MAC) service classes. It is to be noted that the SL classes do not necessarily have a one-to-one correspondence with the MAC classes. This is to keep MAC relatively simple, but open to support different networking platforms. Other AL functions are packet segmentation to fit the MAC protocol data units (PDUs) and error detection and recovery by means of automatic repeat request (ARQ), when required. D1 relates to OFDMA-TDMA and OFDMA-CDMA. Handling priorities and packet arrangement are also provided.

Document D2 relates to the OFDM-CDMA technique, to which an added dynamic reservation/request MAC protocol is proposed, fully exploiting the OFDM-CDMA platform. Central is the support of different QoS profiles, in the context of QoS aware networks. As a case study, the explicit presentation of the IETF integrated services support over the wireless local loop system is addressed. An extensive performance evaluation focused on the MAC layer is then reported. The scheme achieves high utilization efficiency, as well as a fair share

of the available radio capacity, even in the presence of highly heterogeneous traffic mix. Delay performance is provided for both reference traffic models, as well as for measured IP and MPEG traffic traces offered to the system.

The present application relates to an OFDMA-TDMA (Orthogonal Frequency Division Multiplex-Time Division Multiple Access) based wireless Internet terminal comprising: a QoS profile storing information about a QoS policy; a classifier for classifying data packets to be transmitted according to the QoS policy; a first module including a first priority controller that gives priorities to the classified data packets according to the QoS policy; a PDU maker for generating PDUs from the data packets given the priorities; a second priority controller for determining priorities of the PDUs according to a predetermined policy; and a second module arranging the PDUs in an allocated bandwidth to transmit the PDUs. Furthermore, a packet processing method and a recording medium storing a program used for a wireless terminal are provided, too.

Hence, both documents, D1 or D2, provide OFDMA-TDMA based techniques comprising QoS and data packets classification according to the QoS policy as well as PDU generation and priority scheduling. Furthermore, both documents provide a construction of data handling in the first layers, especially in the MAC-layer.

Accordingly, all features of claims 1 to 11 can be found in either of the cited documents. Thus, claims 1 to 11 are lacking novelty and do not provide an inventive step.

Industrial applicability is given.